

# A FIRST REPORT OF THE FERN GENUS *VITTARIA* IN NEW YORK

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## ABSTRACT

The first New York State records for gametophytes of the fern genus *Vittaria* are reported from Cattaraugus and Chautauqua Counties. The Chautauqua Co. station is only the third in a glaciated area and is the northernmost location known. The stations cited also provide the first county records in western New York for *Trichomanes* gametophytes.

Key Words: *Vittaria*, gametophytes, state record, *Trichomanes*

The morphology, ecology, and biogeography of sporophyteless gametophytes of the fern genera *Vittaria* and *Trichomanes* have been described by Farrar (1967, 1978) and McAlpin and Farrar (1978). Farrar et al. (1983) established state records for these genera in Pennsylvania and expanded considerably the known range of *Trichomanes* in New England. Noting that all sites reported for *Vittaria* were south of the Wisconsinan terminal moraines, these workers suggested that its pre-Pleistocene distribution may have been truncated by glaciation. Cusick (1983) subsequently reported *Vittaria* gametophytes from 80 km north of the Wisconsinan terminal moraine in Geauga County, Ohio.

The first reports of *Vittaria* for New York State are recorded herein as follows:

1. Cattaraugus Co. August 3, 1983. Rock City Park, Rt. 646. Scattered in large NW-facing rock houses of Pottsville sandstone conglomerate, in woods. *Parks* 4295.
2. Cattaraugus Co. August 3, 1983. Three miles W of Rt. 646 on Nichols Run Road. Very rare in shaded crevice of SW-facing outcrop of Pottsville sandstone conglomerate, in woods. *Parks* 4296.
3. Chautauqua Co. August 3, 1983. Panama Rocks Park. Scattered populations of gemmiferous plants in massive 10 m high, SE-facing rock houses of Pottsville sandstone conglomerate, in woods. Area glaciated. *Parks* 4298.

*Trichomanes* gametophytes were also located at sites one and three above (*Parks* 4294 and 4297 respectively) and at Bear Cave



Rocks in Allegany Park, Cattaraugus Co., on August 2, 1983, *Parks* 4293. Vouchers of Parks' cited collections are on deposit at MVSC.

The Chautauqua County station at Panama Rocks lies in a glaciated region (Muller, 1963) and was itself ice covered (Muller, personal correspondence, 1983). The Wisconsin-Kent terminal moraine lies about 19 km to the southeast and the Illinoian-Maple-dale terminal moraine lies an additional 6.2 km further away (Berg, 1980). Panama Rocks is the northernmost station reported for *Vittaria* and is quite different from the surrounding area of Chautauqua County. It is part of an outlying ridge of Pennsylvanian sandstone conglomerate (Pottsville formation or equivalent). Though the Cattaraugus County site to the southeast is in an unglaciated portion of New York known as the Salamanca reentrant, it is strikingly similar geologically and ecologically to Panama Rocks. Further, judging from Cusick's (1983) description of *Vittaria* habitat in glaciated Ohio, that site is also similar to the Panama Rocks station. These observations support Cusick's argument that the occurrence of *Vittaria* gametophytes probably is closely related to appropriate physical and geological factors.

Post-Pleistocene reestablishment in glaciated areas of these sporophyteless fern gametophytes has been discussed by Farrar et al. (1983). The report of *Vittaria* from glaciated western New York is consistent with this discussion. Dispersal mechanisms and other factors which might influence the differential distribution of *Vittaria* and *Trichomanes* in the glaciated NE United States and adjacent Canada remain enigmatic. Workers are encouraged to examine carefully other appropriate sites north of the terminal moraines for *Vittaria* gametophytes. Though less likely to be encountered there than the gametophytes of *Trichomanes*, those of *Vittaria* clearly may be found.

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*LOMATOGONIUM ROTATUM* (GENTIANACEAE) AND  
*PRIMULA LAURENTIANA* (PRIMULACEAE)  
IN MAINE: NEW LOCALITIES AND  
GENERAL DISTRIBUTIONS

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ABSTRACT

Two herbaceous plant species, *Lomatogonium rotatum* and *Primula laurentiana*, are known to occur in the United States only on the offshore islands of eastern Maine. Both species grow in full sun and in thin, circumneutral soil just above the upper splash zone of the ocean. We report new localities and discuss the overall geographic distribution for these two species.

Key Words: *Lomatogonium rotatum*, *Primula laurentiana*, Maine, range limit, offshore islands

Several plant species reach the southern limit of their range along the coastal headlands and islands of the west coast of the Bay of Fundy (Fernald and Wiegand, 1910; Hodgdon and Pike, 1964; Olday et al., 1982). A maritime climate of cool summer temperatures, extensive rainfall and fog, and low evapotranspiration rates account, in part, for this phylogeographic pattern. In this region, two boreal species, *Lomatogonium rotatum* (L.) Fries, the star gentian or marsh felwort, and *Primula laurentiana* Fern., the bird's-eye-primrose, are now known from only one location each in New Brunswick and a total of 16 offshore islands in eastern Maine. We report discovery of eight of these stations during our field work on a more detailed study of the reproductive biology of *P. laurentiana*. We also characterize the local habitat and overall distribution of these two taxa.

Stebbins (1929) first discovered *Lomatogonium rotatum* in Maine at Schoodic Point. This population has not been seen recently, but this species has since been found on nine islands in eastern Maine (Table 1; Figure 1). In 1982 and 1983 we discovered five of them and verified those previously reported. In all of these localities, *L. rotatum* grows in full sun and in thin, granitically derived, mineral soil and organic duff in a narrow belt between the forest edge and the upper splash zone above the intertidal zone. It also occurs in areas of high soil moisture near brackish pools and in rock crevices serving as drainage tracks from the upland. This plant